

***Phoetaliotes
nebrascensis* (Thomas)**
Largeheaded Grasshopper

Description: Short-winged, medium-sized, light gray grasshopper, with very large head relative to size of body. Short forewings pointed and inrolled. Tibiae blue.

Range: British Columbia to Michigan and south to Texas and Arizona.

Wisconsin distribution: Western Upland portion of the Wisconsin range of tallgrass prairie.

State rank: S2/S4.

Habitat: With few exceptions, collected on dry hill prairies and sand prairie on river terraces.

Discussion: Feeds on grasses, preferring lush, tall grassy areas (Pfadt 1994). In Wisconsin, tallgrass prairie remnants are few and prairie habitat is mostly confined to rocky and sandy substrates. The species is found also in marshes and swales in Michigan, Iowa, and Minnesota (Cantrall 1968, Somes 1914). Little collecting has been done in these habitats in Wisconsin.

During this study *P. nebrascensis* was collected at 13 dry prairie sites.

Specimens examined: 70 males, 7 females from 18 sites.

References: Vickery and Kevan (1985), Pfadt (1994), NHI (2001).

see Color Plate, p. 38

GRASSHOPPER

SPECIES ACCOUNTS



KATHRYN MURK

Acridinae

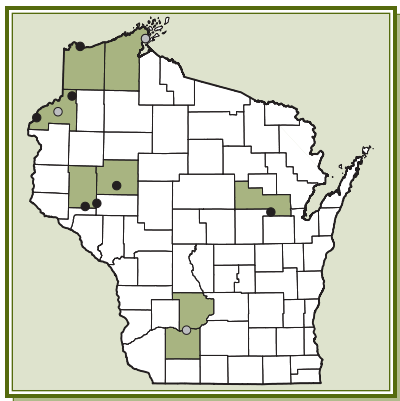
Gomphocerinae

Cyrtacanthacridinae

Melanoplinae

OEDIPODINAE

ERIC EPSTEIN



OEDIPODINAE

Arphia conspersa Scudder Speckled Rangeland Grasshopper

Description: Forewings dark, hind wings vary in color from red to yellow. Abdomen yellow to brown. Light yellow or straw-colored line often appears at the dorsal juncture of the forewings. Hind tibiae yellow, often with a blue or greenish tint.

Range: Most of western North America, Minnesota to California. Vickery and Kevan (1985) report one record from the Upper Peninsula of Michigan.

Wisconsin distribution: North of the Tension Zone plus Sauk and Iowa counties along the Wisconsin River.

State rank: S2.

Habitat: Generally associated with sandy gravel soils in dry prairie settings, such as open sand of northwestern pine barrens and Lake Superior sand spits.

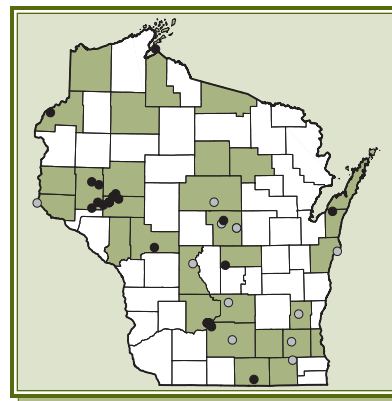
Discussion: This species overwinters as a nymph, most likely buried in dead grass. Wisconsin specimens were all collected in May and June.

Specimens examined: 9 males, 4 females from 11 sites.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985).



HERBERT D. POWNALL



Arphia pseudonietana (Thomas) Redwinged Grasshopper

Description: Dark, large-sized grasshopper. Forewings dark brown with numerous dark speckles. Red hind wings typical across most of the range, but yellow-winged forms common across Wisconsin. Abdomen dark brown. Hind tibiae brown to black, with yellow basal ring. Inner face of hind femora black. Some individuals have a grayish-white pronotal disc.

Range: Most of western North America, east to Michigan, Ontario, and northern Ohio.

Wisconsin distribution: Widely distributed across Wisconsin.

State rank: S5.

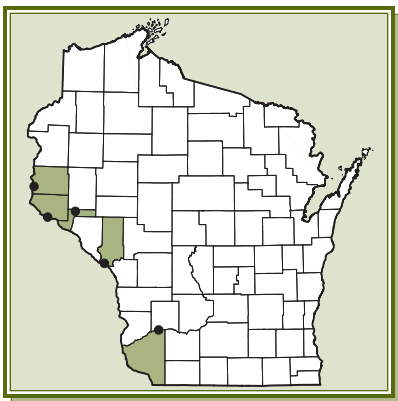
Habitat: Similar habitat to *A. conspersa*, sandy gravel soils in dry prairie.

Discussion: The hind wings of this species are red in most populations across the range, but mixed populations occur in the upper peninsula of Michigan (Cantrall 1968). The majority of the Wisconsin specimens (114 of 132) have yellow hind wings, with one known mixed population (both red and yellow-winged individuals) from Eau Claire County. The remaining specimens are from scattered populations across the northern counties and primarily have pink hind wings, but also include red-winged and one orange-winged specimen. Adults are collected from mid-July to early October.

Specimens examined: 84 males, 55 females from 42 sites.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985).

see Color Plate, p. 39



***Arphia simplex* Scudder**
A Grasshopper

Description: Large, gray-black grasshopper. Hind wings yellow, with a complete black margin. Inner surface of hind tibiae may be bluish. Tibiae with two white bands.

Range: South Central Great Plains north to western Iowa, disjunct to southeast Missouri and southern Ohio.

Wisconsin distribution: Collected from five counties bordering the Mississippi River in western Wisconsin.

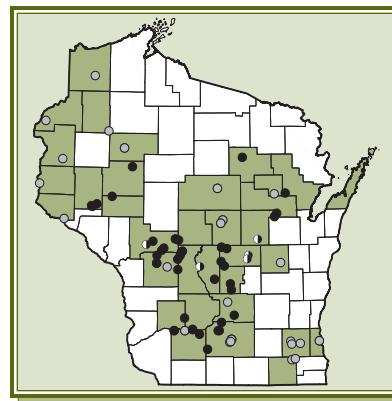
State rank: S1/S2.

Habitat: Associated with remnant prairies, grassy woodlands, and timber margins. The Grant County specimen is from sand barrens.

Discussion: Hind wings are yellow in all Wisconsin specimens. Wisconsin specimens were collected May 29, June 11, June 22, and July 14. These records dramatically extend the eastern edge of the range from the previous eastern boundary of western Iowa.

Specimens examined: 8 specimens from 5 sites.

References: Otte (1984).



Arphia sulphurea
(Fabricius)
Spring Yellow-winged
Grasshopper

Description: Smaller than other *Arphia* spp. Black to blackish-gray body, with yellow hind wings. Median carina of pronotum weakly cut by sulcus and commonly has a moderate arch readily observable from the side.

Range: Eastern half of North America, from New England to eastern Nebraska.

Wisconsin distribution: Abundant across much of Wisconsin, but most recently collected only from interior counties of the state.

State rank: S5.

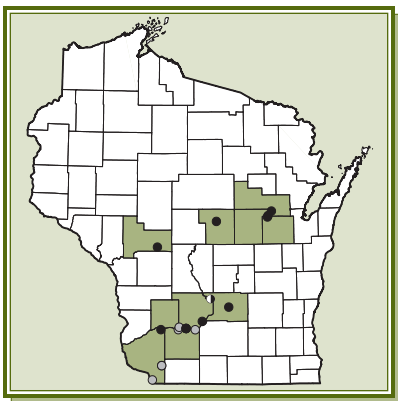
Habitat: Open woodlands with grassy understory, fields, prairies and roadsides.

Discussion: Nymphs overwinter, adults are collected from April to July, with most specimens collected in June.

Specimens examined: 56 males, 75 females from 93 sites.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985).





Arphia xanthoptera
(Burmeister)
**Autumn Yellow-winged
Grasshopper**

Description: Large, black to blackish-gray grasshopper. Median carina of pronotum prominent. Hind wings yellow. Hind tibiae black with white basal ring.

Range: Eastern half of U.S., from New England to Nebraska and Texas.

Wisconsin distribution: Tension Zone south.

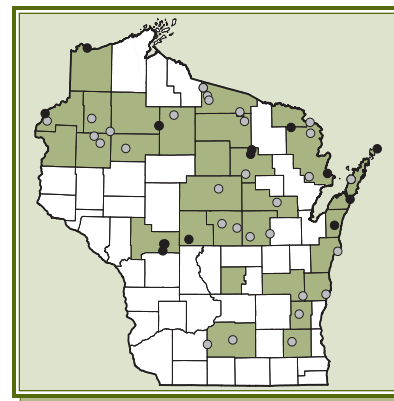
State rank: S3?.

Habitat: Sandy soils in dry open oak woodland, oak openings, jack pine/oak barrens, dry prairie, and upland fields.

Discussion: The range of *A. xanthoptera* appears to correlate with the range of black oak (*Quercus velutina*) within the state (Cochrane and Iltis 2000), as well as nationally (U.S.G.S. 2002). We suggest that this species may be dependent on oak savanna. Adults are collected from July to October in Wisconsin. Most specimens have been collected recently.

Specimens examined: 37 males, 8 females from 18 sites.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985).



Camnula pellucida
(Scudder)
Clearwinged Grasshopper

Description: Yellow to brown grasshopper, with mottled forewings. Hind wings clear, with no banding.

Range: Common in the northern states from Maine to Minnesota, and the western one-third of the U.S.

Wisconsin distribution: Widely collected across the northern half of the state.

State rank: S5.

Habitat: Sandy openings across the north, commonly collected in wet sandy ditches and Lake Superior sand dunes.

Discussion: The species has been found much less frequently in southern Michigan and Minnesota than in the northern portions of those states (Cantrall 1968, Somes 1914), but the last specimen from southern Wisconsin was taken in Marquette County in 1934. Hebard (1934) reported this species along Lake Michigan in 1901. Adults are generally collected from late June through September, but two records from Lincoln County are dated May 28, 1934, and June 2, 1948.

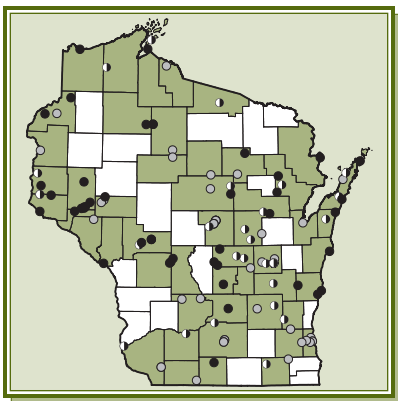
Specimens examined: 112 males, 94 females.

References: Hebard (1932, 1934), Cantrall (1968), Otte (1984), Vickery and Kevan (1985), Pfadt (1994).

see Color Plate, p. 39



HERBERT D. POWNALL



***Chortophaga
viridifasciata* (DeGeer)**
Greenstriped Grasshopper

Description: Medium to large grasshopper. Body color variable, brown to bright green, occasionally with purple highlights. Commonly, males are brown and females are green. Hind wings pale yellow with a faint black band. Male fastigium narrows strongly and a horizontal band marks the eye.

Range: Widespread and common across the eastern two-thirds of the U.S., ranging westward to the Rocky Mountains.

Wisconsin distribution: Common across the entire state.

State rank: S5.

Habitat: Grassy swales, stream banks, and roadside ditches.

Discussion: This species overwinters as a late instar nymph, adults collected from May to July.

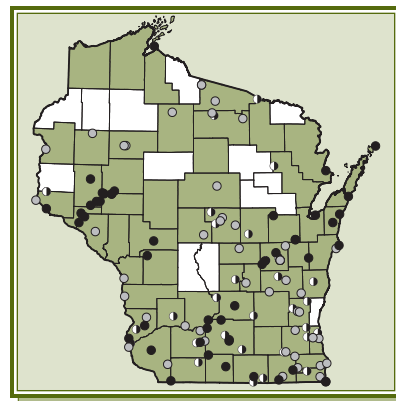
Specimens examined: 149 males, 202 females.

References: Hebard 1932, Cantrall 1968, Otte 1984, Vickery and Kevan 1985, Pfadt 1994.

see *Color Plate, p. 39*



GIFF BEATON



***Dissosteira carolina*
(Linnaeus)**
Carolina Grasshopper

Description: Large grasshopper. Wisconsin specimens range from a solid brown or reddish-clay color to straw-colored with distinct banding on forewings. Hind wings black with yellow margins.

Range: Throughout the U.S. and southern Canada.

Wisconsin distribution: Common and widespread across the entire state.

State rank: S5.

Habitat: Found in roadsides and disturbed areas, wherever bare ground and open areas are present.

Discussion: *D. carolina* has been collected from late June through October in Wisconsin, most specimens captured in August and September. Because it is found in diverse habitats, there is great variation in forewing coloration.

Specimens examined: 163.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985), Pfadt (1994).

see *Color Plate, p. 39*



DAN JOHNSON



Encoptolophus costalis
(Scudder)
Western Dusky Grasshopper

Description: Gray, medium-sized grasshopper with three distinct black bands on forewing. Pronotum with pale X-shaped marking on the disc. Hind wing clear to smoky with a weak, incomplete black band. Hind tibiae blue.

Range: Central Great Plains from Manitoba to central Mexico.

Wisconsin distribution: One specimen at the Milwaukee Public Museum from Milwaukee County in 1906.

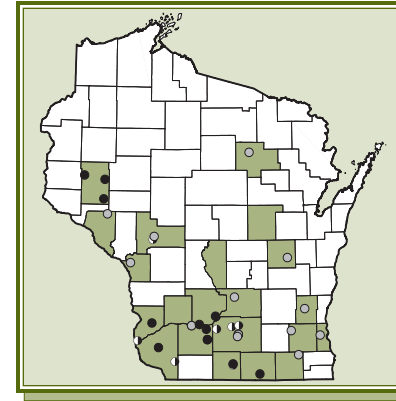
State rank: SH?/S1.

Habitat: Prairies, open grassland, and open woodland elsewhere, but no habitat information is available on the Wisconsin specimen.

Discussion: The 1906 collection of this species expands the known range, but since it has not been collected in almost 100 years, it has probably been extirpated from Wisconsin. This species was recognized based on the following characteristics: abdomen yellow below, tibiae blue-gray, fastigium longer than wide, dorsal field of forewings with converging pale stripes.

Specimens examined: 1 female.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985), Richman et al. (1993), Pfadt (1994).



Encoptolophus sordidus (Burmeister)
Dusky Grasshopper

Description: Gray medium-sized grasshopper with three distinct black bands on forewing. Pronotum with short black dashes on posterior edges and pale X-shaped marking on the disc. Hind wing clear to smoky with weak and incomplete black band. Hind tibiae dark brown.

Range: New England to the central Great Plains.

Wisconsin distribution: South of the Tension Zone and Langlade County in northern Wisconsin.

State rank: S5.

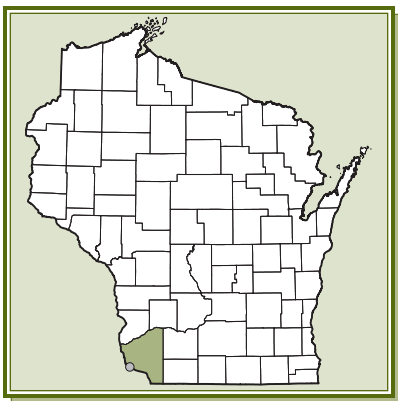
Habitat: *E. sordidus* prefers weedy sites in the western U.S., but is found on disturbed prairie remnants and woodlands in Wisconsin.

Discussion: Generally collected in late August and September, never found in abundance. It has been considered a pest species in the western states. Only one specimen has been collected in northern Wisconsin, though the range through neighboring states suggests it should be found in the North.

Specimens examined: 48 males, 25 females from 37 sites.

References: Somes (1914), Otte (1984), Vickery and Kevan (1985), Richman et al. (1993).





***Hippiscus ocelote*
(Saussure)
Wrinkled Grasshopper**

Description: Large, robust-bodied grasshopper, with mottled forewings. Hind wings yellow to pale orange. Inner surface of hind femora yellow with distinct black bands. Hind tibiae yellow.

Range: Widespread over the eastern two-thirds of the U.S., to the front range of the Rocky Mountains but apparently limited in northern range to the 42nd Parallel east of the Great Plains.

Wisconsin distribution: One specimen from the southwest corner of the state (Cassville, Grant County).

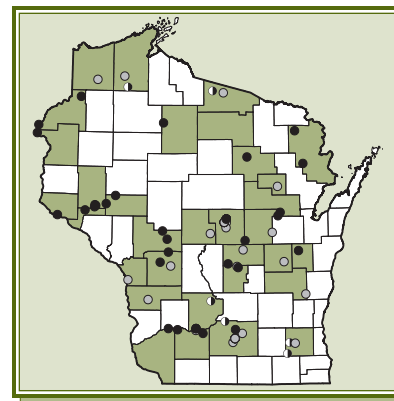
State rank: SH.

Habitat: Dry fields and prairie, alfalfa and timothy hayfields.

Discussion: The only Wisconsin specimen was collected September 30, 1956.

Specimens examined: 1 female at UW-Platteville Biology Department.

References: Capinera and Sechrist (1982), Otte (1984), Richman et al. (1993).



***Pardalophora apiculata*
(Harris)
Coralwinged Grasshopper**

Description: Large, robust bodied grasshopper. Forewing area between veins Cu1 and Cu2 entirely dark. Hind wings pale to rosy red. Inner surface of hind femora pale yellow with black bands. Hind tibiae yellow.

Range: Widespread across north central U.S. into Canada, commonly associated with prairie-forest borders.

Wisconsin distribution: Widespread across the state.

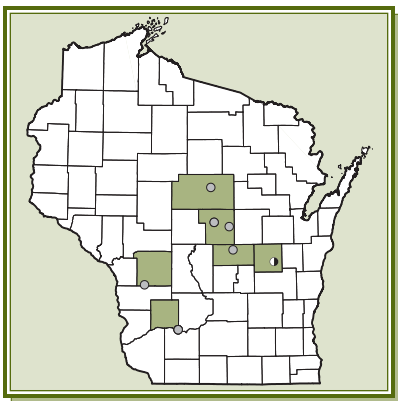
State rank: S5.

Habitat: Generally found in association with sand or sandy outwash soils, uplands and old fields.

Discussion: Adults are collected from late April to early July. The species overwinters as a nymph. Many of the specimens have the proximal bands of the inner femur fused.

Specimens examined: 110 collection records.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985), Richman et. al (1993).



***Pardalophora
haldemani* (Scudder)**
Haldeman's Grasshopper

Description: Large, robust-bodied grasshopper, with mottled forewings. Hind wings yellow to red. Inner surface of hind femora orange to rosy red with no banding. Hind tibiae yellow.

Range: Central Great Plains, southern Michigan west to the front range of the Rocky Mountains.

Wisconsin distribution: Sands of the Central Plains.

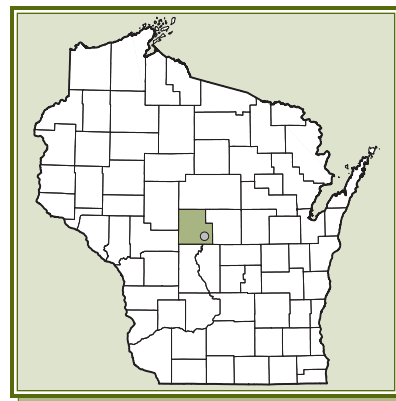
State rank: SH/S1.

Habitat: Open areas of sparse vegetation on sandy soils.

Discussion: The species overwinters as a nymph, adults are collected from May to July, though the specimen from Lone Rock, Richland County, was collected on August 10, 1906. The three most recent collections of this species are from 1981, 1973, and 1959. Possibly the species is being replaced by *P. apiculata* in Wisconsin as appears to be the case in areas of Michigan (Otte 1984).

Specimens examined: 11 males, 13 females from 12 sites.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985), Richman et al. (1993).



***Pardalophora
phoenicoptera*
(Burmeister)**
Orangewinged Grasshopper

Description: Large, robust-bodied grasshopper, with mottled forewings. Hind wings deep orange to rosy red. Inner surface of hind femora blue basally, with two or three black bands. Hind tibiae yellow to orange.

Range: Southeastern U.S., from Florida north to Ohio, Indiana, and northern Illinois, west to Texas and Oklahoma.

Wisconsin distribution: Wood County in the sands of the Central Plains.

State rank: SH.

Habitat: Woods, openings, brushy hillsides and meadows in southern states. The Wood County specimen was collected at "Griffith St. Nursery."

Discussion: Hart and Gleason (1907) reported the species as common on grassy dunes and oak barrens along the Illinois River, and Hebard (1934) reported the species collected at Fulton, Illinois on the Mississippi River about 50 miles south of the Wisconsin border. The 50-year old Wisconsin specimen has the distinctive blue coloration on the inside of the hind femora.

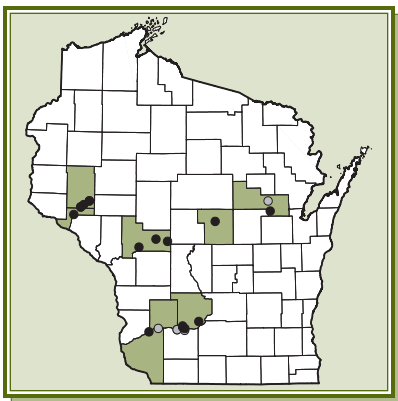
Specimens examined: 1 immature.

References: Hart and Gleason (1907), Hebard (1934), Otte (1984).

see Color Plate, p. 40



GIFF BEATON



Psinidia fenestralis
(Serville)
Longhorned Grasshopper

Description: Slender-bodied, dark gray to dark brown grasshopper. Hind wings rosy red, with clear band in the black outer margin of the male. Ensiform antennae.

Range: Eastern third of U.S. to eastern Minnesota.

Wisconsin distribution: Commonly collected along river bottoms in those counties with large rivers and sandy banks.

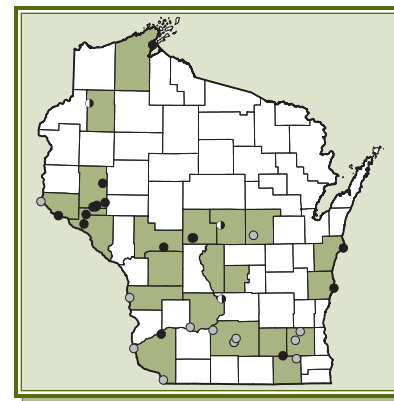
State rank: S2/S4.

Habitat: Sand, sand blowouts, and sandy river bottoms along the lower Chippewa and Wisconsin rivers.

Discussion: Most adults are collected from late June through September. Previous authors have discussed the ease by which this species is captured in the field, but our experience has been to the contrary. Adults, when disturbed along the Chippewa River, take flight, often traveling great distances with some individuals landing on the opposite bank. This species is commonly found in association with *Trimerotropis maritima* along the Lower Chippewa and Wisconsin rivers.

Specimens examined: 19 males, 9 females from 19 sites.

References: Hebard (1932), Froeshner (1954), Cantrall (1968), Otte (1984), Vickery and Kevan (1985).



Spharagemon bolli
Scudder
Boll's Grasshopper

Description: Medium-sized, wood brown to dark brown grasshopper. Forewings may have two or three faint black bands. Hind wings yellow, with black band across the central area. Inner surface of hind femora with four black bands and the proximal two bands fused. Hind tibiae red, with ivory and black basal rings.

Range: Eastern two-thirds of the U.S., from New England to the front range of the Rocky Mountains.

Wisconsin distribution: Primarily south of the Tension Zone in Wisconsin. One specimen from Bayfield County coincides with previous records from the Michigan-Wisconsin border.

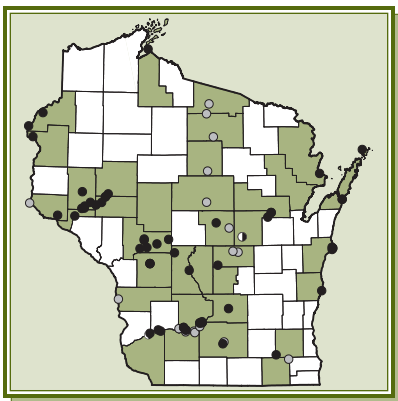
State rank: S3/S4.

Habitat: Open, sunny, dry prairie-woodland margins, including oak woodlands, oak savanna, barrens, dunes on Lake Michigan, sandblows, and sand flats along major rivers.

Discussion: *S. bolli* inhabits Lake Michigan dunes behind the beach, whereas *S. collare* is found on the open beach and dunes. Adults are collected from June to October, with most Wisconsin specimens collected in July.

Specimens examined: 37 males, 12 females from 35 sites.

References: Hebard (1932), Froeschner (1954), Cantrall (1968), Otte (1984), Vickery and Kevan (1985).



Spharagemon collare
(Scudder)

Mottled Sand Grasshopper

Description: Medium-sized, gray to light brown, mottled grasshopper, with medium carina of pronotum prominent and deeply cut. Forewing banding, when present, appears as clustered speckles. Hind wings yellow, with the black band across the central area. Hind tibiae red to orange.

Range: Northern U.S., from New England to western Montana, southern extensions along the front range of the Rocky Mountains into New Mexico.

Wisconsin distribution: Collected widely across the state.

State rank: S5.

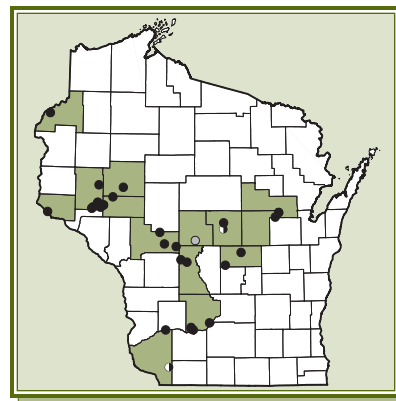
Habitat: Preferential to open sandy soil and sparse vegetation, barrens, dunes, sandy river terraces, and roadsides with open sand.

Discussion: *S. collare* is common on Lake Michigan beaches. Adults are collected from late June through September. We examined one specimen from the UW-Madison Arboretum labeled May 5, 1967, but consider it to be improperly labeled. This is perhaps the best flier of the three *Spharagemon* spp. occurring in Wisconsin and appears to colonize restored prairies.

Specimens examined: 113 males, 54 females from 62 sites.

References: Hebard (1932), Froeschner (1954), Cantrall (1968), Otte (1984), Vickery and Kevan (1985), Bomar (2001).

see **Color Plate, p. 40**



Spharagemon marmorata marmorata
(Harris)

Northern Marbled Grasshopper

Description: Medium-sized grasshopper. Color quite variable, gray to brown, and usually highly speckled. Medium carinae of pronotum low. Hind wings yellow, with black band across central area, and clear to smoky tip outside black band. Hind tibiae red banded, with black and usually white basal rings.

Range: Northern states, New England to eastern Minnesota.

Wisconsin distribution: Southwestern Wisconsin to the northern edge of the Tension Zone.

State rank: S4.

Habitat: Jack pine barrens of the Central Plains, in open sandy areas on edges of trails, prairie borders within dry forest, sandblows, and river terraces.

Discussion: This beautiful mottled grasshopper is a very poor flier and a low, sluggish jumper. Most specimens are collected in July and August. The earliest Wisconsin collection date is July 1, 1998, in Juneau County. Only four specimens were collected prior to the most recent sampling period. Ontario (NatureServe 2001) and Wisconsin (NHI 2001) rank this as a species of Special Concern, though we found it to be well represented in sandy habitat in the central part of the state.

Specimens examined: 35 males, 7 females from 36 sites.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985), NHI (2001), NatureServe (2001).

see **Color Plate, p. 40**



MIKE REESE



Trachyrhachys kiowa
(Thomas)
Kiowa Grasshopper

Description: Slender, medium-sized tan grasshopper, with black splotches. Pronotum cut by two sulci. Forewings generally lighter near pronotum with two or three dark spots on side of forewings. Hind wings generally pale yellow basally in Wisconsin, but variable across the range. Tibiae light blue to blue-gray.

Range: Widespread across the U.S., from Virginia west to California, with its greatest predominance in the western Great Plains and Rocky Mountain states.

Wisconsin distribution: A few sites in the Central Plains and Western Uplands.

State rank: S2.

Habitat: This may be a barrens species in Wisconsin. It was not found at dry prairie sites.

Discussion: *T. kiowa* has only been collected at three sites during the recent period; two in jack pine barrens of the Central Plains and one in sand prairie near the Wolf River. Adults are collected July 13 through September 24. A great amount of variation exists in this species across its range; three or four subspecies may exist or even more than one species (Otte 1984). Wisconsin specimens fall into the category of *T. k. fuscifrons* or *T. k. thomasi*, having pale yellow hind wings with black outer bands of variable intensity.

Specimens examined: 13 males, 14 females from 12 sites.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985), Pfadt (1994), NHI (2001).



Trimerotropis huroniana
E.M. Walker
Lake Huron Locust

Description: Medium to large-sized highly speckled grasshopper. Pronotum cut by two sulci. Gray to yellow or pale brown coloration with dark or weak banding on forewings. Hind wings clear to light yellow, with black band in the central area. Inner surface of hind femora with a broad dark basal band. Hind tibiae yellow.

Range: Northern dunes of Lake Michigan, Lake Huron, and Lake Superior.

Wisconsin distribution: Door County.

State rank: S1, END.

Global rank: G2/G3.

Habitat: Undisturbed high quality dunes on the northern shores of Lake Michigan. The grasshoppers are encountered behind the open beach, where dune grass (*Ammophila breviligulata*) has become established, though Hubbell (1929) observed that the females might be found on the beach just above the high water mark.

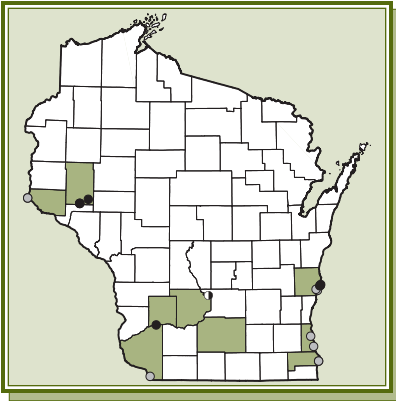
Discussion: Adults collected on July 28, 1999, and August 17, 1988. In heavily used areas of beach, the species is replaced by *Spharagemon collare*. The U.S. Fish and Wildlife Service lists this species, under the name of "Lake Huron Locust", as endangered. *T. huroniana* occurs only in Michigan, Wisconsin, and Ontario (NatureServe 2001).

Specimens examined: 5 males, 4 females from 2 sites.

References: Hubbell (1929), Cantrall (1968), Otte (1984), Vickery and Kevan (1985), NatureServe (2001).

see Color Plate, p. 40





***Trimerotropis maritima*
(Harris)
Seaside Grasshopper**

Description: Medium to large-sized, highly speckled grasshopper. Pronotum cut by two sulci. Gray to yellow or pale brown coloration with bands on long forewings that may be very pale. Hind wings clear to light yellow, with the black band in the central area. Inner surface of the hind femora with narrow and short dark basal band. Hind tibiae yellow.

Range: Widespread in eastern and central U.S., with specimens from as far west as Arizona, most prominent along the Atlantic Coast.

Wisconsin distribution: Found commonly along the sandy shores of the lower Chippewa and Wisconsin rivers, and on beaches along southern Lake Michigan.

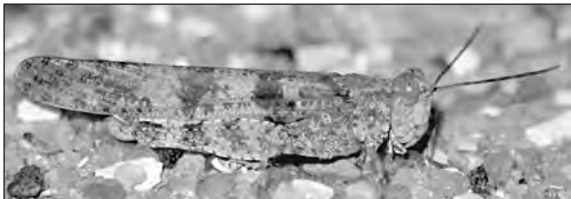
State rank: S2/S4.

Habitat: Sand beaches, river terraces, and sand barrens. The Lake Michigan habitat is similar to that of *T. huroniana*, but the two species have never been recorded together.

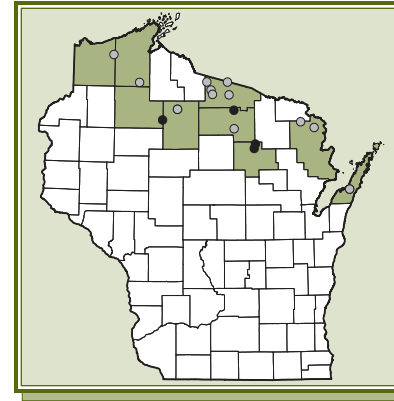
Discussion: Adults have been collected from July 13 to September 20. This species is a great flier, and often difficult to catch. Along the lower Chippewa River, we often observed adults resting on open sands. These individuals were very sensitive to movement and readily took flight, often for very long distances. Some individuals were never observed landing.

Specimens examined: 27 males, 21 females from 17 sites.

References: Hubbell (1929), Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985).



GIFF BEATON



***Trimerotropis
verruculata
verruculata* (Kirby)
Crackling Grasshopper**

Description: Dark-bodied, strongly speckled grasshopper. Pronotum cut by two sulci. Hind wings pale yellow, with black band in central area and smoky band in distal third. Hind tibiae brown to black, with pale basal rings.

Range: Northern states of eastern and Midwestern U.S. into the border provinces, including the northernmost portions of Manitoba and Saskatchewan.

Wisconsin distribution: The Northern Highlands.

State rank: S3?.

Habitat: Northern mesic to dry mesic forest.

Discussion: There have been few recent collections of this species. Thirteen of 17 sites were collected prior to 1952. Most of the Wisconsin specimens were collected in August.

Specimens examined: 16 males, 12 females from 17 sites.

References: Hebard (1932), Cantrall (1968), Otte (1984), Vickery and Kevan (1985).